



a benzoxazole, benzotriazole or benzthiazole compound, other than the compound ² mercaptobenzothiazole.

REMARKS

In the above-identified Office Action the Examiner has maintained his rejection of claim 27 as being anticipated by Parham. Applicant has amended claim 27 to reflect that it has nonherbicidal properties which is in direct contrast to the herbicidal composition of Parham. As a result, it is believed that claim 27 now defines over Parham and should be allowable.

The Examiner has rejected claims 22, 24-26, 31, 33, and 34 according to the Dutch abstract 6701062, which teaches a herbicidal mixture including calcium lignin sulphonate. Applicant notes that claim 22 recites an oil soluble basic compound and the mixture set forth in the Dutch 062 patent is slightly susceptible to UV degradation because of its diesel oil content. Moreover, calcium lignin sulphonate itself is primarily a neutral or slightly acidic combination. Shown in the attached data sheet, is a product of Soil-Tech which refers to calcium lignin sulphonate with a pH of 7 and data sheets from Wes Co Technologies including 7 compositions, 6 of which are slightly acidic with the exception of Weschem CA4, which is slightly basic, i.e., pH of 9. As explained in the sheet, to reach this slightly basic pH, it is necessary that a special procedure involving the removal of reducing substances by fermentation be employed. As a result, absent special circumstances, it is seen that calcium lignin sulfonate is a slightly acidic substance, in contrast to the oil soluble basic compound, which is recited in the claims and the overbased sulphonate specifically recited. Further, when one compares a calcium lignin sulfonate with an overbased sulfonate as claimed, the difference between a very basic sulfonate and a slightly acidic or neutral sulfonate stands out.

Claims 22, 24-27, 31, 33-35, 38, 40-42 have been rejected as obvious in view of Parham and the Dutch 062. In view of the arguments set forth above for the allowability of claims 22 and 27, Applicant believes that these claims are allowable as well.

Applicant hereby requests reconsideration and allowance.



With the above amendments and remarks, this application is considered ready for allowance. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, he is respectfully requested to call the undersigned at the below-listed number.

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Respectfully submitted,

WELSH & KATZ, LTD.

By

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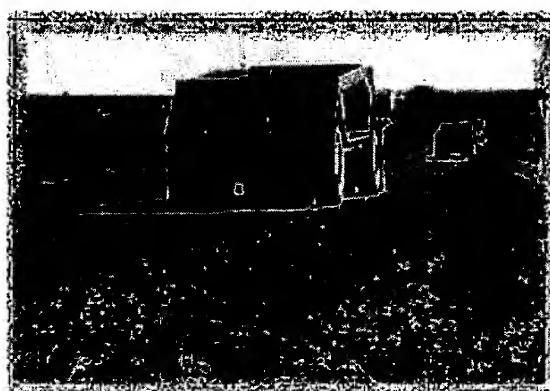
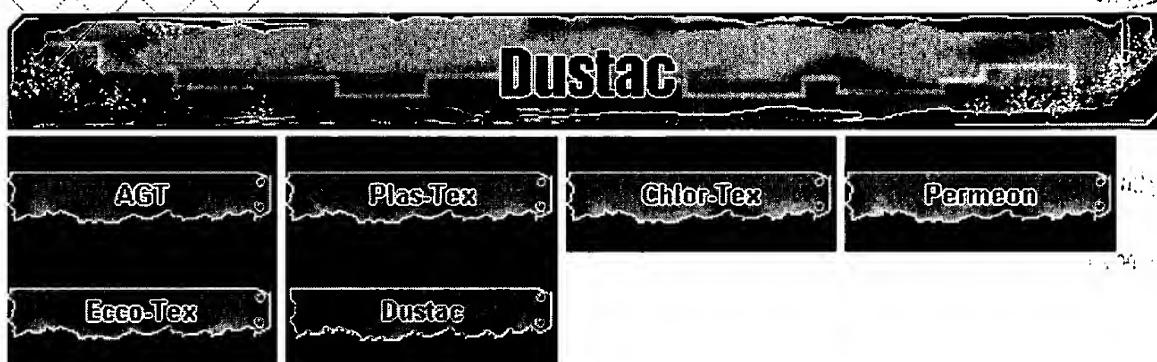
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DUSTAC® Road Binder

Calcium lignosulfate - liquid pH=7 solution

Recommended for road stabilization and dust control especially around environmentally sensitive areas such as aquifers, lakes, streams, recreational and residential areas.

Benefits

- ◊ Biodegradable, nonhazardous and nontoxic, does not leach hydrocarbons or heavy metals unlike petroleum products or salt solutions
- ◊ Improves road traction
- ◊ Reduces road repairs
- ◊ Eliminates dust clouds
- ◊ Preserves roadside vegetation

Application notes

- ◊ Easy to apply using existing road maintenance equipment
- ◊ Road use can be resumed immediately after application
- ◊ Light rain or rewetting rejuvenates the binding action



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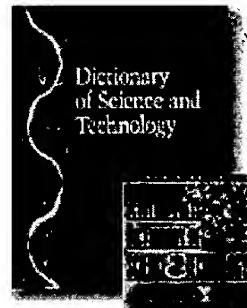
lignin sulfonate *Organic Chemistry*, a metallic sulfonate salt occurring as a tan to dark brown powder, derived from the lignin of sulfite, softwood pulp-mill liquids; it is nonhygroscopic and is insoluble in all organic substances; it decomposes above 200°C; used as a dispersing agent, extender, and ore flotation agent. Also, **lignosulfonate**.

Previous Words

[lignify](#), [lignin](#), [ligninase](#), [lignin net](#), [lignin plastic](#)

Next Words

[lignite](#), [lignite A](#), [lignite B](#), [lignite wax](#), [lignitous coal](#)



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Typical Properties of Weschem Calcium Lignosulfonates

	Product		
Property	CA-1	CA-4	CA-7
Lignosulfonate %	80+	80+	80+
Reducing Sugars %	7	0	7
Sulfur %	6.6	6.9	6.6
Calcium %	5.0	8.5	5.0
Sodium %	0.2	0.2	0.2
Nitrogen %	0.1	0.2	0.1
Ash %	20.0	25.0	20.0
Moisture %	5	5	5
pH (10% soln)	4.5	9.0	6.5
Viscosity cps (50% soln)	900	8,000	900
Specific Gravity (lbs/cft)	23	23	23

For graphical information about Specific Gravity click [here](#)

For graphical information about Viscosity click [here](#)

For analytical data on Weschem CA-1 showing some of the minor trace organic compounds, click [here](#)

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DATA SHEET

WESCHEM CA-5

Weschem CA-5 is an ultra-purified calcium lignosulfonate, prepared from the acid-bisulfite pulping of western softwood. Inorganic salts have been completely removed and most of the sugars, sugar residues and other carbohydrates are absent due to the purification process.

Weschem CA-5 has been developed as a dispersant for concrete admixtures. It offers superior slump retention and water-reduction properties similar to naphthalene sulfonates. It can be substituted for some of the post-sulfonated Kraft lignin products currently used.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	90+
Reducing Sugars	0
Sulfur	7
Calcium	5.5
pH of 10% solution in water	5.5
Viscosity of 50% solution at 25°	< 10,000 cps

The liquid product is available as a 48-51% solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC

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WESCHEM CA-3

Weschem CA-3 is a mixed calcium/sodium lignosulfonate manufactured under rigid controls to assure a product of the highest quality. Reducing substances are removed by fermentation and the lignosulfonate content is higher than in sugar-containing products.

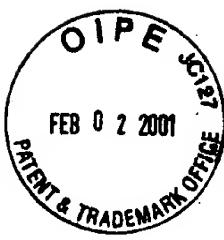
Weschem CA-3 is an excellent dispersant for use in the manufacture of gypsum board and stucco.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	80+
Reducing sugars	0
Total sulfur	6.8
Calcium	4.4
Sodium	4.0
Nitrogen	0.1
Ash	20.0
Moisture	< 6.0
pH of 10% solution	9.0
Viscosity of 50% solution at 25° C	1000 cps

The liquid product is available as a 48-51% solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC

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WESCHEM CA-7

Weschem CA-7 is a unique calcium lignosulfonate, manufactured under rigid controls. Hexose sugars are removed, by fermentation, to increase the concentration of lignosulfonate. The product is treated further to reduce insoluble matter. It is concentrated to 50% solids in solution or dried to a powder.

Weschem CA-7 is an excellent dispersant for use in concrete admixtures. The resultant admixtures allow a reduction of water and increase the workability of the concrete. Weschem CA-7 will meet or exceed the requirements in ASTM C-494 "Specifications for Chemical Admixtures for Concrete" for Type B retarding and Type D water-reducing and retarding admixtures. In air-entrained concrete, the amount of air-entraining admixture can be reduced from normal when Weschem CA-7 is used in a Type B or Type D admixture.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	80+
Reducing Sugars	7.0
Total Sulfur	6.6
Sodium	0.2
Insolubles	< 2.0
Magnesium	0.2
Moisture	6.0
pH of 10% solution	6.5
Viscosity of 50% solution at 25° C	900 cps

The liquid product is available as a 50 ± 1 % solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC

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WESCHEM PB

Weschem PB is a calcium lignosulfonate designed for use in the preparation of animal and poultry feed pellets. It is approved for use in feed preparations by the FDA up to 4% by weight on a solids basis. Weschem PB has a metabolized energy level comparable to many ingredients it would replace in the formula. Palatability and ingestion are unaffected. Pellets made with Weschem PB are harder, smoother and have a higher durability than untreated or otherwise treated pellets. Die extrusion rates are improved, due to the absence of fines and the lubricating effect of Weschem PB which reduces power requirements and hang-up in the dies.

The dosage range is typically 1.0 - 2.5%. Weschen PB has 990 calories of metabolizable energy and 900 calories of production energy per lb of solids. Weschem PB is usually fed as a 50% aqueous solution directly into the mixing chamber via a spray nozzle. Typically a metering pump/tank with heating coils/solenoid switches is all that is required.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	80+
Carbohydrates, including sugars	15.0
Magnesium	0.3
Nitrogen	3.2
Sodium	0.2
Potassium	0.1
Phosphorus	0.5
Moisture	6.0
pH of 10% solution	6.0
Viscosity of 50% solution at 25° C	1800 cps

The liquid product is available as a 50 ± 1 % solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC

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WESLIG 120

Weslig 120 is a unique calcium lignosulfonate, manufactured under rigid controls. Hexose sugars are removed, by fermentation, to increase the concentration of lignosulfonate. It is concentrated to 50% solids in solution or dried to a powder.

Weslig 120 is an excellent dispersant for finely divided solids in aqueous systems. Major applications include thinning cement slurries, to improve green strength in ceramics manufacture, as a flotation aid in ore separation, as a grinding aid in clinker grinding, in concrete admixtures, in gypsum board manufacture, in wax emulsions and in dust control and soil stabilization.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	80+
Reducing Sugars	7.0
Total Sulfur	6.6
Calcium	5.5
Nitrogen	0.1
Ash	20.0
Moisture	6.0
pH of 10% solution	4.5
Viscosity of 50% solution at 25° C	900 cps

The liquid product is available as a 50 ± 1 % solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC

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WESCHEM CA-1

Weschem CA-1 is a unique calcium lignosulfonate, manufactured under rigid controls. Hexose sugars are removed, by fermentation, to increase the concentration of lignosulfonate. It is concentrated to 50% solids in solution or dried to a powder.

Weschem CA-1 is an excellent dispersant for finely divided solids in aqueous systems. Major applications include thinning cement slurries, to improve green strength in ceramics manufacture, as a flotation aid in ore separation, as a grinding aid in clinker grinding, in concrete admixtures, in gypsum board manufacture, in wax emulsions and in dust control and soil stabilization.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	80+
Reducing Sugars	7.0
Total Sulfur	6.6
Calcium	5.5
Nitrogen	0.1
Ash	20.0
Moisture	6.0
pH of 10% solution	4.5
Viscosity of 50% solution at 25° C	900 cps

The liquid product is available as a 50 ± 1 % solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC

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WESCHEM CA-4

Weschem CA-4 is a calcium lignosulfonate manufactured under rigid conditions to assure a product of the highest quality. Reducing substances are removed by fermentation and the lignosulfonate content is higher than in sugar-containing products.

Weschem CA-4 was developed, primarily, as a dispersant for use in the manufacture of gypsum board and stucco products.

TYPICAL ANALYSIS (% of oven-dried solids)	
Lignosulfonate	80+
Reducing sugars	0
Total sulfur	6.9
Calcium	8.5
Nitrogen	0.1
Ash	20.0
Moisture	< 6.0
pH of 10% solution	9.0
Viscosity of 50% solution at 25° C	8000 cps

The liquid product is available as a 48-51% solution in water. It is usually transported in tank trucks and rail cars. Drums of some products are available at a substantial cost.

Packing is in 25 kg or 50 lb bags. 500, 1000 and 1225 kg bulk bags are available. The product is a brown powder with a slight odor. Palleting and stretchwrapping are available at an extra charge. Exports are from Seattle, Tacoma and Vancouver, BC.

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